UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TQ DELTA, LLC,)
)
              Plaintiff,)   C.A. No. 13-cv-1835-RGA
)
    v.)
)
2WIRE, INC.,)
)
              Defendant.)
)

DEFENDANT 2WIRE, INC.'S OPENING BRIEF IN SUPPORT OF ITS MOTION FOR JUDGMENT ON THE PLEADINGS

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Dated: December 22, 2016

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I.   NATURE AND STAGE OF THE PROCEEDINGS

Plaintiff TQ Delta, LLC ("TQ Delta") filed this patent infringement lawsuit against

Defendant 2Wire, Inc. ("2Wire") on November 4, 2013, and currently asserts twenty-four patents

against 2Wire across six so-called patent "families." D.I. 1, D.I. 7 (First Amended Complaint).

Based on TQ Delta's infringement contentions, 2Wire understands TQ Delta to be asserting

Claims 5 and 7 of U.S. Patent No. 7,570,686 ("the '686 patent"), Claims 1 and 2 of U.S. Patent

No. 7,835,430 ("the '430 patent"), Claims 1 and 2 of U.S. Patent No. 7,889,784 ("the '784

patent"), Claims 1-4 of U.S. Patent No. 8,238,412 ("the '412 patent"), and Claims 1-4 of U.S.

Patent No. 8,432,956 ("the '956 patent") (collectively, the "Asserted Claims" of "the Family 1

Patents"), as well as certain claims of other patents not addressed in this motion.

TQ Delta also is asserting some of the same Family 1 Patents in other cases assigned to

this Court.[1] On November 30, 2016, the Court issued an Order construing several terms in the

claims of the Family 1 Patents. *See TQ Delta LLC v. Comcast Cable Comm'ns LLC*, Case No.

1:15-cv-00611-RGA, 2016 WL 7013481, at *1, 10-13 (D. Del. Nov. 30, 2016).[2]

The parties' next status conference is currently set for January 11, 2017.[3]

II.   SUMMARY OF THE ARGUMENT

1.   None of the asserted claims of the Family 1 Patents recite eligible subject matter

under 35 U.S.C. § 101. The Family 1 Patents are drawn to, at most, the abstract concept of

collecting diagnostic or test information at a central office regarding the status of remote DSL

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[1] These cases are *TQ Delta LLC v. Comcast Cable Comm'ns LLC*, Case No 1:15-cv-00611-RGA; *TQ Delta LLC v. CoxCom LLC et al*, Case No. 1:15-cv-00612-RGA; *TQ Delta LLC v. DirecTV LLC*, Case No. 1:15-cv-00613-RGA; *TQ Delta LLC v. DISH Network Corp. et al.*, Case No. 1:15-cv-00614-RGA; *TQ Delta LLC v. Time Warner Cable Inc., et al.*, Case No. 1:15-cv-00615-RGA; and *TQ Delta LLC v. Verizon Servs. Corp.*, Case No. 1:15-cv-00616-RGA (the "MoCA cases").

[2] 2Wire reserves all of its rights with respect to claim construction in this case.

[3] The parties have requested to move to the status conference to February 2, 2017.

subscriber equipment. Such claims do not recite patentable subject matter under *Alice Corp. v. CLS Bank Int'l*, ___ U.S. ____, 134 S. Ct. 2347, 2354 (2014).

2.   The claims of the Family 1 Patents do not add any inventive concept to the abstract idea. Rather, the claims recite a conventional technological environment (*e.g.*, a conventional transceiver, conventional methods of communicating information, etc.). Nor do the Family 1 Patents require the transceiver to do anything with the message, or the diagnostic or test information within the message.

3.   As a result, pursuant to Fed. R. Civ. P. 12(c), claims 5 and 7 of the '686 patent, claims 1 and 2 of the '430 patent, claims 1 and 2 of the '784 patent, claims 1 through 4 of the '412 patent, and claims 1 through 4 of the '956 patent are invalid under 35 U.S.C. § 101, and these claims should be dismissed.

III.   FACTUAL BACKGROUND

The Family 1 Patents share a common specification[4] and claim priority to provisional applications filed August 10, 2000 and January 7, 2000.[5] The Family 1 Patents are directed to sending diagnostic or test information between a central office and a subscriber's DSL equipment over the DSL subscriber loop. *See* Declaration of Brett M. Schuman in Support of 2Wire's Motion for Judgment on the Pleadings, Ex. A, '686 patent, at col. 1:34-39. As the patent explains, connections between a subscriber and a central office can experience disturbances and perform poorly, making it necessary to collect diagnostic and test information from the transceiver in the subscriber's DSL equipment. Traditionally, this was done by sending

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[4] References herein to the specification are to the '686 patent, and all exhibits are attached to the Declaration of Brett M. Schuman in Support of 2Wire's Motion for Judgment on the Pleadings, filed concurrently herewith.

[5] The '430 patent is attached hereto as Exhibit B, the '784 patent is attached hereto as Exhibit C, the '412 patent is attached hereto as Exhibit D, and the '956 patent is attached hereto as Exhibit E.

a technician to a subscriber's home to collect the information – the so-called "truckroll." *Id.* at

col. 1:27-33. The Family 1 Patents involve "[t]ransmission of information from the remote

terminal to the central office . . . to determine problems at the remote terminal without a

truckroll." *Id*. at col. 2:60-64 ("Summary of Invention").

For the diagnostic or test information itself, the Family 1 Patents describe sending and

receiving information according to known formats, such as using modulation onto DMT symbols

and Quadrature Amplitude Modulation (QAM) using more than one bit per subcarrier. *Id*. at col.

3:44-53. The specification identifies a wide variety of data that might be transmitted in

diagnostic or test messages, and can be "any combination of variables which allow for

transmission of test and/or diagnostic information." *Id.* at col. 4:1-54; *see also id.* at col. 2:35-

55, Table 1.

The specification places no limits on how the claimed systems and methods are

implemented. The alleged invention can be implemented using a general or special purpose

computer, a modem, a computer with a modem, a programmed microprocessor or

microcontroller, an integrated circuit, a digital signal processor, a hardwired electronic or logic

circuit, a programmed logic device, or "any device capable of implementing a finite state

machine." Ex. A, '686 patent at col. 7:47-62. The specification further teaches that the

disclosed methods can be implemented in virtually any type of hardware or software "using any

known or later developed systems or structures, devices and/or software." *Id.* at col. 7:63-8:14.

TQ Delta has subdivided the Family 1 Patents into Family 1A and 1B. *See* Ex. F (TQ

Delta's Identification of Representative Claims), at 2-3. TQ Delta has identified claim 1 of the

'784 patent as "representative" of the asserted claims in Family 1A. *See id.* Claim 1 of the '784

patent recites as follows:

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> A transceiver capable of transmitting test information over a communication channel using multicarrier modulation comprising:
>
> a transmitter portion capable of transmitting a message,
>
> wherein the message comprises one or more data variables that represent the test information,
>
> wherein bits in the message were modulated onto DMT symbols using Quadrature Amplitude Modulation (QAM) with more than 1 bit per subchannel,
>
> and wherein at least one data variable of the one or more data variables comprises an array representing Signal to Noise ratio per subchannel during Showtime information.[6]

Ex. C, col. 8:33-44. As is apparent, Claim 1 of the '784 patent does not require generating or interpreting the test information, or doing anything to the system based on the test information. Other independent claims asserted by TQ Delta are very similar to representative claim 1 of the '784 patent: claim 2 of the '784 patent is the same, except in reverse, reciting a "receiver portion capable of receiving a message." *See* Ex. C, col. 8:45-56. Claims 1 and 2 of the '430 patent and claims 1 and 3 of the '412 patent follow the same pattern, but simply recite different content in the message, "an array representing frequency domain receive idle channel noise information" and "an array representing power level per subchannel information," respectively. *Compare* Ex. B, col. 8:33-56, col. 8:59-9:2 *with* Ex. D, col. 8:45-56, col. 8:59-9:2. Claims 1 and 3 of the '956 patent are identical to claims 1 and 3 of the '412 patent, except they claim that the "message comprises one or more data variables that represent the diagnostic information," as opposed to "test information." *Compare* Ex. E, col. 8:47-58, col. 8:61-9:5 *with* Ex. D, col. 8:45-56, col. 8:59-9:2. Dependent asserted claims 2 and 4 of the '412 patent, and claims 2 and 4 of the '956 patent each recite that the "power level per subchannel information is based on a Reverb signal,"

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[6] "Family 1A," according to TQ Delta, includes the '784 patent, the '430 patent, and the '412 patent. *See* Ex. F, at 2.

and do not further narrow the claims or provide additional structure. *See* Ex. D, col. 8:57-58,

col. 9:3-4; Ex. E, col. 8:59-60, col. 9:6-7.

TQ Delta has identified claim 5 of the '686 as "representative" of the asserted claims of

Family 1B. *See* Ex. F, at 3.[7] Claim 5 of the '686 patent differs only slightly from claim 1 of the

'784 patent. It recites as follows:

> A diagnostic system capable of communicating diagnostic information over a
>   communication channel using multicarrier modulation comprising:
>
> a transceiver capable of transmitting or receiving an initiate diagnostic mode
>   message; and
>
> a message determination module capable of determining and, in cooperation with
>   the transceiver, transmitting a diagnostic message from the transceiver,
>   wherein the diagnostic message comprises a plurality of data variables
>   representing the diagnostic information about the communication channel
>   and each bit in the diagnostic message is mapped to at least one DMT
>   signal, and wherein one variable comprises an array representing
>   frequency domain received idle channel noise information.

Ex. A, col. 9:3-17. As with the other asserted claims in Family 1, claim 5 of the '686 patent does

not require generating or changing anything in the system based on the diagnostic information.

The claim only requires the "initiate diagnostic mode" message from one end of the system and

responsive "diagnostic message" containing the "diagnostic information." Claim 7 of the '686

patent merely recites that the "diagnostic message" of claim 5 comprises "diagnostic information

about the communication channel," and lists examples of the information contained in the

message. *Id.* at col. 9:25-32. It does not limit or narrow the system itself.

IV.   LEGAL STANDARDS

A.   Judgment on the Pleadings

"A Rule 12(c) motion for judgment on the pleadings is reviewed under the same standard

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[7] "Family 1B" according to TQ Delta, includes the '686 and'956 patents. *See* Ex. F, at 3.

as a Rule 12(b)(6) motion to dismiss when the Rule 12(c) motion alleges that the plaintiff failed to state a claim upon which relief can be granted." *Two-Way Media Ltd. v. Comcast Cable Commun's, LLC*, 2016 WL 4373698 at *1 (D. Del. August 15, 2016) (Andrews, J.) (*citing Turbe v. Gov't of the Virgin Islands*, 938 F.2d 427, 428 (3d Cir. 1991)); *Revell v. Port Auth.*, 598 F.3d 128, 134 (3d. Cir. 2010). "The purpose of judgment on the pleadings is to dispose of claims where the material facts are undisputed and judgment can be entered on the competing pleadings and exhibits thereto." *Venetec Int'l, Inc. v. Nexus Med., LLC*, 541 F. Supp. 2d 612, 617 (D. Del. 2008).

"Whether a claim is drawn to patent-eligible subject matter under 35 U.S.C. § 101 is an issue of law" that may be resolved on the pleadings. *Personalized Media Commc'ns., LLC v. Amazon.com, Inc.*, 2015 WL 4730906, at *2 (D. Del. Aug. 10, 2015) (Andrews, J.) (granting Rule 12(c) motion under § 101); *see also buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1352 (Fed. Cir. 2014) (affirming judgment on the pleadings under § 101). But patent-holder plaintiffs such as TQ Delta often argue that subject-matter eligibility cannot be resolved until after claim construction, and courts sometimes agree. *See, e.g., Yodlee, Inc. v. Plaid Techs. Inc.*, 2016 WL 2982503, at *2 (D. Del. May 23, 2016); *Execware, LLC v. BJ'S Wholesale Club, Inc.*, 2015 WL 5734434, at *5 (D. Del. Sept. 30, 2015). Here, TQ Delta cannot fairly argue that 2Wire's motion is premature because, even though the Court has not yet construed the claims in this case, it has recently done so in the co-pending MoCA cases. The Court's November 30, 2016 Order in the MoCA cases construes several of the key terms of the Family 1 Patents that TQ Delta is asserting in both the MoCA cases and this case. The Court's claim constructions are sufficient to resolve the §101 issues raised by the Family 1 Patents.

B.   Invalidity Under 35 U.S.C. § 101

The Supreme Court provides a two-step analysis for determining invalidity under § 101.

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First, a court must determine if the claim is directed to any exceptions to the broad patent-eligibility principles of § 101. *Alice Corp.*, 134 S. Ct. at 2354. Claims covering "laws of nature, natural phenomena, and abstract ideas are not patentable." *Id*. This "filter is a meaningful one, sometimes ending the § 101 inquiry." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (citations omitted). The excluded categories exist to protect the "basic tools of scientific and technological work," which should be "free to all men and reserved exclusively to none." *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012).

Second, if the claim covers a patent-ineligible category, the court must consider "more precisely… what the claim elements add—specifically, whether, in the Supreme Court's terms, they identify an 'inventive concept' in the application of the ineligible matter." *Elec. Power*, 830 F.3d at 1353 (citing *Alice*, 134 S. Ct. at 2355). Such an inventive concept must "ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Alice*, 134 S. Ct. at 2355. In making this determination, the court should look to "the elements of each claim both individually and 'as an ordered combination.'" *Id*. "[T]ransformation into a patent-eligible application requires 'more than simply stat[ing] the [abstract idea] while adding the words 'apply it.'" *Id*. at 2357 (*quoting Mayo*, 132 S. Ct. at 1294); *see also Vehicle Intelligence and Safety LLC v. Mercedes-Benz USA, LLC*, 635 Fed. Appx. 914, 919-20 (Fed. Cir. 2015) (invalidating claim under § 101 where specification and claims did not teach *how* to achieve the claimed functionality).

V.   ARGUMENT

A.   Patentable Subject Matter Must Be Found In The Claims, Not The Specification.

"The § 101 inquiry must focus on the language of the Asserted Claims themselves."

Synposys, Inc. v. Mentor Graphics Corp., 839 F.3d 1138, 1149 (Fed. Cir. Oct. 17, 2016)

(citations omitted); *see also Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728

F.3d 1336, 1345 (Fed. Cir. 2013) ("[T]he complexity of the implementing software or the level

of detail in the specification does not transform a claim reciting only an abstract concept into a

patent-eligible system or method."). Embodiments or other potentially patentable subject matter

that is discussed in the specification, but not claimed in the claims, cannot support eligibility of

the claims. *See Two-Way Media*, 2016 WL 4373698 at *5 ("Even if I accept that the architecture

described in the patent specification is designed to solve the technological problems of load,

bottlenecking, and inadequate records, the fact remains that the claims do not recite the

mechanism by which these problems are solved.").

This well-settled principle has particular application here because the Family 1 Patents'

specification contains substantially more detail regarding the purported invention than what is

actually covered by the claims. For example, the specification goes into more detail regarding a

diagnostic link mode, *see* Ex. A, col. 6:15-44, col. 7:7-38. In some instances, the system

described in the specification can monitor for failures in a communication line and initiate a

more robust diagnostic link mode, in which diagnostic information is sent repeatedly and at

increasing power levels to ensure transmission and receipt at the central office. *Id*. at col. 5:44-

53, col. 6:15-51. But none of this functionality is recited in the claims at issue here and,

therefore, it is not relevant to the § 101 analysis.

B.   The Asserted Claims Of The Family 1 Patents Are Drawn To An Abstract Idea.

The Asserted Claims of the Family 1 Patents all claim nothing more than an abstract idea:

the very basic idea of sending information in a message to a central office from remote DSL

subscriber equipment. Step one of *Alice* considers the "focus" of the claims and their "character

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as a whole." *Elec. Power*, 830 F.3d at 1353 (citations omitted). As part of this analysis, courts

identify and define "whatever fundamental concept appears wrapped up in the claim." *Two-Way*

Media, 2016 WL 4373698 at *2 (*quoting Accenture Global Servs., GmbH*, 728 F.3d at 1341).

At most, the claims of the Family 1 Patents recite a conventional transceiver that is

capable of sending test or diagnostic information. The sending of information is an abstract idea

because "[i]nformation as such is an intangible . . ." and the Federal Circuit has "treated

collecting information, including when limited to particular content (which does not change its

character as information), as within the realm of abstract ideas." *Elec. Power*, 830 F.3d at 1354

(citations omitted); *see also TDE Petroleum Data Soln's, Inc. v. AKM Enterp., Inc.*, __ Fed.

App'x ____, 2016 WL 4271975, at *2 (Fed. Cir. Aug. 15, 2016) (affirming rejection, under

§ 101, of claims directed to receiving sensor data regarding the state of remote oil wells).[8]

As the specification explains, the purpose of the alleged invention is to reduce the need

for a truckroll by having the subscriber's DSL equipment send the necessary test or diagnostic

information directly to the central office. Ex. A, '686 patent, at col. 2:60-64.[9] This is analogous

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[8] This and other courts have found claims relating to the sending and receiving of messages to recite abstract concepts. For example, in *Novo Transforma Techs., LLC v. Sprint Spectrum LP*, 2015 WL 5156526, at *3, (D. Del. Sept. 2, 2015), claims directed to a method of providing guaranteed end-to-end delivery of a payload from a sender to a recipient was directed to the abstract concept of translating a payload from one format to another. In another instance, a claimed method for transmitting message packets over a communication network was directed to the abstract idea of "sending and monitoring the delivery of audio/visual information." *Two-Way Media Ltd.*, 2016 WL 4373698, at *5. In *Network Apparel Group, LP v. Airwaive Networks Inc.*, 154 F. Supp. 3d 467, 495 (N.D. Tex. 2015), a claimed system for managing messaging on a limited-area network directed to abstract idea of giving incentives to an end user to acknowledge the receipt of a message.

[9] Although embodiments or other subject matter discussed in the specification cannot support eligibility of the claims, *see* Section V.A, *supra*, the specification remains relevant to understanding the claims. *See, e.g., Electric Power*, 830 F.3d at 1355 ("Nothing in the claims, understood in light of the specification, requires anything other than off-the-shelf, conventional computer, network, and display technology for gathering, sending, and presenting the desired information"); *see also In re TLI Comm'ns*, 823 F.3d at 612 (noting that the "specification fails

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to the traditional approach to providing remote customer support over the phone. For example, computer users have long been able to seek help to resolve problems with their computers by calling remote support technicians. By providing certain information about the computer, *e.g*., an error message code, a bit of data in a system file, etc., the remote technician (sometimes) is able to resolve the problem, thereby avoiding the need to send a technician to the home or for the user to take the computer to a repair shop. But, significantly, the claims of the Family 1 Patents cover only the *communication* of the information about the problem – not the assessment by the support person as to what steps to take to fix the problem, or the determination of whether the user needs to bring in his computer for repair.

Representative claim 1 of the '784 patent (Family 1A) recites a transceiver that is capable of transmitting a message that includes "test information" over a communication line. This is just a conventional transceiver. And that is the end of claim 1: the transceiver simply sends the message in a known format containing Signal to Noise ratio per subchannel during Showtime information to the central office. The claim does not require anything be to done with the information or to the system beyond sending the information.

Representative claim 5 of the '686 patent (Family 1B) similarly recites the abstract idea of sending and receiving "diagnostic information" in a message. The claim includes a request for diagnostic information (i.e., "a transceiver capable of transmitting or receiving an initiate diagnostic mode message") and a message containing the diagnostic information (i.e., "a message determination module capable of determining . . . and transmitting a diagnostic message from the transceiver"). *See* Ex. A, col. 5:54-64 ("Upon initialization of the diagnostic link mode, the diagnostic device 330, in cooperation with the remote terminal, will transmit an initiate

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to provide any technical details for the tangible components" that would render the recited subject matter patentable).

diagnostic link mode message from the remote terminal to the central office . . . . If the initiate

diagnostic link mode message is received by the central office 200, the diagnostic device 330, in

cooperation with the message determination device 310, determines a diagnostic link message to

be forwarded to the central office 200."). Returning to the technical support analogy, in claim 5,

the support person asks for information about the user's problem, then the user responds with

that information. This request-response exchange is the epitome of an abstract idea.

The Family 1 Patents also do not claim any specific improvements to the function of a

computer itself. *See In re TLI Commc'ns LLC Patent Litig*., 823 F.3d 607, 611 (Fed. Cir. 2016)

(*quoting Enfish, LLC v. Microsoft Corp*., 822 F.3d 1327, 1335 (Fed. Cir. 2016)). The claims of

the Family 1 Patents recite only generic components and sending of a message. The

specification of the Family 1 Patents does not limit the terms of the claims by disclosing any

specific hardware or computer functions, or improvements to existing hardware or computer

functions, that would be required to perform the method. Indeed, the specification teaches that

the alleged inventions can be implemented using virtually any kind of hardware or software. *See*

Ex. A, col. 7:48-58, col. 7:63-8:14. Even when considering the specification, the Family 1

Patents fail to disclose a solution to any problem specific to the function of computers, and thus

the claims are directed to an abstract idea. *See Affinity Labs of Texas, LLC v. DirecTV, LLC*, 838

F.3d 1253, 1259 (Fed. Cir. 2016) ("the specification underscores the breadth and abstract nature

of the idea embodied in the claims."); *see also Kaavo Inc. v. Cognizant Tech. Sol'ns Corp.*, 2016

WL 476730, at *7 (D. Del. Feb. 5, 2016); *Kaavo Inc. v. Tier 3, Inc.*, 2016 WL 1268308 (D. Del.

Mar. 31, 2016) (adopting report and recommendations).

Moreover, the Family 1 patents solve no specific problem with respect to the operation of

the system based on the content of the diagnostic or test information in a message, nor do they

describe novel ways of generating or calculating that information. *See id.* at col. 5:64-66 ("For example, the diagnostic link message can include test information that has been assembled during, for example, the normal ADSL initialization procedure."); col. 4:42-46 ("The systems and methods of this invention can be tailored to contain many different diagnostic and test information variables. Thus, the system is fully configurable, allowing subsets of data to be sent and additional data variables to be added in the future."); *see also* Table 1 (listing "Exemplary Message Variables"). The claims, even as considered in light of the specification, recite only an abstract concept. *See Affinity Labs*, 838 F.3d at 1259.

The claims as construed also do not require the Family 1 Patents to generate, calculate, or measure the information in any particular way. This Court has recently construed the term "test information" in some of the same Family 1 patents as those asserted here to mean "information relating to a characteristic of a communication channel or the communications equipment operating on that channel." *TQ Delta, LLC*, 2016 WL 7013481, at *11-12. In doing so, the Court rejected TQ Delta's contention that test information must relate to a "measured characteristic." *Id.*[10] Thus, there is nothing inventive about the way the information in the message was generated or measured, and the message does not further limit the alleged invention, or render it sufficiently concrete to pass muster under § 101.

C.   The Asserted Claims Of The Family 1 Patents Do Not Recite Any Inventive Concept.

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[10] The claims of the '686 patent and the '956 patent recite "diagnostic information," as opposed to "test information," but the specification similarly does not describe methods or ways of measuring diagnostic information, nor does it require diagnostic information to relate to a measured characteristic. *See, e.g.*, Ex. A, '686 patent, col. 4:51-54 (" . . . in general, the variables transmitted from the modem being tested to the receiving modem can be any combination of variables which allow for transmission of test and/or diagnostic information."); col. 5:24-27 ("Thus, it should be appreciated that the components of the diagnostic link system 100 can be combined into one device for respectively transmitting, receiving, or transmitting and receiving diagnostic and/or test information.").

The claims of the Family 1 Patents do not contain any elements or limitations that add any inventive concepts. Instead, the claims merely recite known hardware or software components, *e.g.*, "transceivers," and known methods of modulating and sending or receiving data in messages, *e.g.*, "bits in the message [] modulated onto DMT symbols using Quadrature Amplitude Modulation (QAM) with more than 1 bit per subchannel." In addition, the contents of the test or diagnostic messages, *e.g.*, idle channel noise information, signal-to-noise ratio, and power level per subchannel, are not inventive concepts.

1.   Representative Claim 1 Of The '784 Patent Does Not Contain Any Inventive Concept.

The specification acknowledges that the transceiver, and the format of the message itself, that are recited by the Family 1 Patents' claims constitute nothing more than conventional elements of multicarrier modulation. Generic tangible components cannot transform an otherwise abstract idea into patentable subject matter. *See, e.g., In re TLI Commc'ns*, 823 F.3d at 615 (finding that specification's "vague, functional descriptions of server components are insufficient to transform the abstract idea into a patent-eligible invention."). And even "'[S]pecific-sounding' language regarding conventional computer components' functions… does not confer patent eligibility" and the fact that "software has a particular task does not mean it is not conventional computing technology." *Broadband iTV v. Oceanic Time Warner Cable, LLC*, 135 F. Supp. 3d 1175, 1192 (D. Hawaii 2015) (citations omitted).

Claim 1 of the '784 patent recites "a transceiver capable of transmitting test information over a communication channel using multicarrier modulation." The transceiver itself clearly is not an inventive concept, as even the specification says that such a transceiver was known in the art at the time of the invention. *See* Ex. A, '686 patent, col. 1:24-31 (describing transceiver in the "Background of the Invention" section), col. 1:65-2:1 ("Consistent with industry practice, the

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modems are often referred to as 'ATU-R' ('ADSL transceiver unit, remote,' i.e., located at the customer premises) and 'ATU-C' ('ADSL transceiver unit, central office,' i.e., located at the central office)."). Moreover, the transceiver described in the Family 1 Patent cannot, by itself, add an inventive concept. The term "transceiver" in the Family 1 Patents has been construed as a "communications device capable of transmitting and receiving data wherein the transmitter portion and receiver portion share at least some common circuitry." *TQ Delta LLC*, 2016 WL 7013481, at *4. This construction places no further limitation on the structure of the transceiver itself, nor does it distinguish it from a generic telecommunications transceiver. And in turn, a conventional transceiver necessarily has a "transmitter portion capable of transmitting a message" and/or a "receiver portion capable of transmitting a message," as required by the claims.

Claim 1 of the '784 patent next recites a known format for sending (or receiving) the message containing test information. The specification admits that modulating a message into DMT symbols and using Quadrature Amplitude Modulation (QAM) with more than one bit per subchannel was known at the time of the invention. For example, the specification states that the information can be "modulated by using one bit per DTM [sic] symbol modulation, as is used in the C-Rates1 message in the ITU and ANSI ADSL standards . . ." '686 patent, col. 3:46-48. "[H]igher order QAM modulation (>1 bit per carrier)" is identified as an "exemplary modulation technique[]," and is not described further in the specification. *Id.* at col. 3:50-53. These elements are known, and not described further in the specification; thus they do not add an inventive concept.

2. The Content of the Message Itself Is Not An Inventive Concept.

Claim 1 of the '784 patent recites the content of the message (an array representing Signal to Noise Ratio per subchannel during Showtime information) without claiming the

creation of that information, or any operation of the system based on that content.[11]   The Federal

Circuit has repeatedly held that an inventive concept may not be found in the content of received

information. *See Elec. Power*, 830 F.3d at 1353 ("[w]e have treated collecting information,

including when limited to a particular content (which does not change its character as

information), as within the realm of abstract ideas." (citations omitted)). In *Electric Power*,

claims directed to receiving, analyzing, and displaying information about a power grid were held

to be unpatentable even where they were limited to the specific data relevant to power grids. *Id.*

at 1354-55. The claims did "not even require a new source or type of information, or new

techniques for analyzing it." *Id.* at 1355.

Here, the claims of the Family 1 patents do not claim, and the specification does not

describe, any inventive way of collecting or determining a Signal to Noise Ratio per subchannel

during Showtime – the specification only mentions it as an example of the content of a message.

See, e.g., Ex. A, '686 patent, col. 2:35-44; Table 1; col. 5:64-6:9. Finally, the parameters

themselves, *e.g.*, Signal to Noise Ratio, were known parameters in multi-carrier modulation

telecommunications systems. *See, e.g.*, Ex. G (G.992.1 ADSL standard), at §§ 9.5.1 and 9.5.2

(describing near-end and far-end signal to noise ratio margins as test parameters).[12] The '784

patent does not describe, or purport to claim, invention of the Signal to Noise Ratio parameter.

Instead, the patent claims only a transceiver that transmits a message containing that non-novel

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[11] The asserted claims of the '956 patent recite that the message contains "an array representing power level per subchannel information," and the asserted claims of the '430 patent and the '686 patent recite that the message contains "an array representing frequency domain received idle channel information."

[12] Exhibits G and H are ADSL standards that predate the Family 1 patents. ADSL is referenced throughout the patents and in TQ Delta's complaint. *See, e.g.*, Ex. A, '686 patent, col. 1:24-50; D.I. 1 (Complaint) at ¶ 7. The Court may consider these documents in a Rule 12(c) Motion. *See, e.g., In re Burlington Coat Factory Sec. Litig.*, 114 F.3d 1410, 1426 (3d Cir. 1997); *Venetec Int'l*, 541 F. Supp. 2d at 617.

information over a network.

The same is true for the other parameters recited in the other asserted claims. While some variables appear in the claims, the specification does not describe (and therefore, the claims cannot encompass) any ways of collecting or determining an "array representing frequency domain received idle channel noise information," as recited in the claims of the '430 patent and the '686 patent, and this term only appears in the claims and the lists of exemplary information in a message. *See* Ex. A, '686 patent, col. 5:64-6:9.[13] The parameter recited in the '412 patent and the '956 patent, "array representing power level per subchannel information," is not mentioned other than in the claims, and is only referred to as an example of a variable containing more than one item of data. *See, e.g.*, *id.* at col. 4:32-35 ("For example, the *Average Reverb Signal* contains the power levels per tone, up to, for example, 256 entries, detected during the ADSL Reverb Signal.").[14] Nor do the claims, as construed, require that this information be determined or calculated in a specific way. These two terms have recently been construed as "ordered set of values representative of noise in the frequency domain that was received by a transceiver on respective subchannels in the absence of a transmission signal" and "ordered set of values representative of power levels of respective subchannels." *See TQ Delta,* 2016 WL 7013481, at *12-13. For both terms, the Court rejected TQ Delta's contention that these values must be "measured," *see id.*, further indicating that this claim merely recites the exchange of information

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[13] The parameter "frequency domain received idle channel noise information" was known before the alleged invention and was described in ADSL standards. *See* Ex. H (ANSI T1.413 – 1995) at § 10.4.1 ("The idle channel noise on the POTS circuit shall not exceed 18dBrnC at either the POTS or the PSTN interfaces with the ADSL system installed whether operating or not operating.").

[14] The parameter "power level per subchannel" was known as well. *See* Ex. G § 10.1.1 ("Specifically, each receiver communicates to its far-end transmitter the number of bits and relative power levels to be used on each DMT subcarrier . . .").

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in a message.[15]

3. Representative Claim 5 of the '686 Patent Does Not Contain Any Inventive Concept.

Though claim 5 of the '686 patent differs slightly from the other representative claims, it also does not add anything inventive to the abstract concept of sending and receiving messages. Claim 5 recites a transceiver (a conventional telecommunications component) that is "capable of transmitting or receiving an *initiate diagnostic mode message*." (emphasis added). The "initiate diagnostic mode" message does not narrow or limit the conventional transceiver in any meaningful way. It just describes the content of the message being sent or received by the claimed transceiver. According to the specification, "a user or, for example, a technician at the CO, can specify that the remote terminal 300 enter into the diagnostic link mode." *See* Ex. A, '686 patent, col. 5:46-48.

Claim 5 also recites a generic "*message determination module* capable of determining and, in cooperation with the transceiver, *transmitting a diagnostic message from the transceiver*." (emphasis added). The specification itself does not describe any particular hardware or software for the message determination module – at most, the specification describes a "message determination device," without providing further detail or structure. *See* '686 patent, Ex. A, col. 4:62-66. The specification teaches only that the "message determination device" cooperates with a "diagnostic device" (not claimed) to "determine[] a diagnostic link message to be forwarded to the central office 200." *See id.* So, in other words, the "message determination device" together with the un-claimed "diagnostic device" decides the content of the message to be transmitted by the transceiver. This is just a basic request-response operation.

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[15] Nothing in the record compels a different result for the term "array representing Signal to Noise ratio per subchannel during Showtime information." Neither the claims nor the specification indicate that this information is measured or determined in any particular way.

The content of the response message may be important to the functioning of the system of claim 5, but the claim does not cover how the message is generated or how the system is affected by the content of the message. *Id.* at 5:60-64. For example, the content of the message claimed in claim 5 of the '686 patent is "frequency domain received idle channel noise information." Claim 5 does not address how "frequency domain received idle channel noise information is generated or how the system is modified based on the sending or receipt of that information. The remainder of the limitations of claim 5 of the '686 patents recite the format and content of the message, and so do not provide an inventive concept.

D.   The Remaining Asserted Claims of the Family 1 Patents Are Also Invalid Under § 101

The remaining asserted claims of the Family 1 Patents also purport to claim ineligible subject matter. The court need not individually address all claims so long as "the claims are substantially similar and linked to the same abstract idea." *Two-Way Media Ltd.*, 2016 WL 4373698 at *4, n.2 (internal quotations omitted) (affirming invalidity of multiple claims for failure to satisfy § 101 based on representative claim); *see also Bilski v. Kappos*, 561 U.S. 593, 611-12 (2010) (invalidating eleven claims as unpatentable after detailed analysis of two claims). TQ Delta has admitted that claim 1 of the '784 patent and claim 5 of the '686 patent are substantially similar, and thus linked to the same abstract idea as the remaining asserted claims of each respective patent by stating that claims 1 of the '784 patent and claim 5 of the '686 patent are "representative" of the remainder of the asserted claims in their respective subfamilies. *See* Ex. F, at 2-3.

1.   Dependent Claims 2 and 4 of the '412 Patent, and Claims 2 and 4 of the '956 Patent, Do Not Significantly Limit the Claims.

Each of dependent claims 2 and 4 of the '412 patent and claims 2 and 4 of the '956 patent add the limitation "wherein the power level per subchannel information is based on a Reverb

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signal."[16] This added limitation does not add patentable subject matter. First, the "Reverb"

signal is known from the ADSL standards. *See* Ex. A, '686 patent, col. 3:57-61 ("The

REVERB1 and SEGUE1 signals are defined in the ITU and ANSI ADSL standards. The

REVERB1 signal is generated by modulating all of the carriers in the multicarrier systems with a

known pseudo-random sequence thus generating a wideband modulated signal."); Ex. G, §

10.5.2 ("R-REVERB1 is used to allow the ATU-C to measure the upstream wideband power in

order to adjust the ATU-C transmit power level"). Second, this limitation adds no structure or

further detail that would cause these claims to recite patentable subject matter. At most, this

limitation recites how the power level per subchannel information is calculated – without

describing or disclosing any process for determining that information, or describing how that

information is used. *See Elec. Power*, 830 F.3d at 1354-55.   Accordingly, the dependent

asserted claims of the '412 and '956 patents are invalid as well.

2. The Additional Limitations of Claim 7 of the '686 Patent Does Not Recite Patentable Subject Matter.

Claim 7 of the '686 patent adds only a list of items of "diagnostic information about the

communication channel" that can be included in the diagnostic message. As with the other

diagnostic or test information recited in the claims, the information itself does not mean that the

claim recites patentable subject matter. *See Elec. Power*, 830 F.3d at 1354-55. Moreover, these

parameters are not by themselves novel, and the specification does not describe any specific

ways of determining them. *See* Ex. A, '686 patent, col. 2:35-44; col. 5:66-6:9; *see also id.* at

Table 1. Indeed, the parameters recited in claim 7 appear only in the claims and in lists of

examples of diagnostic or test information. *See id.* Claim 7 of the '686 patent fares no better

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[16] The term "Reverb signal" was construed to mean a "signal generated by modulating carriers in a multicarrier system with a known pseudo-random sequence to generate a wideband modulated signal." *TQ Delta*, 2016 WL 7013481, at *13. This construction does not add any specificity or structure to the asserted claims such that they would recite patentable subject matter.

than the other claims and does not recite patentable subject matter.

VI.   CONCLUSION

2Wire respectfully requests that the Court enter judgment on the pleadings that the

Asserted Claims of the Family 1 Patents are invalid as drawn to patent-ineligible subject matter

under 35 U.S.C. § 101.

Dated: December 22, 2016

Respectfully submitted,

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